IN THE CLAIMS

No amendments, cancellations, or additions are made to the claims, which are reproduced here for the Examiner's convenience.

1. (Previously Presented) A method comprising:

generating a set of associated router packets from a function packet received from a function packet source, wherein generating the set of associated router packets comprises determining the router packet length from pre-stored router packet length information that can be different from function to function, and wherein each router packet has a router packet data length that is less than or equal to a function packet length; and

sending the set of associated router packets to a router.

2. (Original) The method of claim 1, further comprising:

receiving the function packet from the function packet source, wherein the function packet includes a function packet header and function data.

3. (Original) The method of claim 1, further comprising:

receiving a function packet header from the function packet source, wherein the function packet header indicates the function packet length and the router packet data length.

4. (Original) The method of claim 1, further comprising:

receiving a segment of the function packet from the function packet source;

determining whether the segment of the function packet has a length at least equal to the router packet data length; and

if the segment of the function packet does have the length at least equal to the router packet data length, proceeding to generate a router packet that includes the segment of the function packet.

5. (Original) The method of claim 1, wherein generating the set of associated router packets comprises:

determining the function packet length and the router packet data length from a function packet header.

6. (Previously Presented) The method of claim 1, wherein the router packet length information is stored in a router packet length table.

7. (Previously Presented) The method of claim 6, further comprising:

manually re-configuring the pre-stored router packet length information.

8. (Previously Presented) The method of claim 1, further comprising:

determining router packet length from pre-stored router packet length information stored in a router packet length table;

dynamically adjusting the pre-stored router packet length information based on system performance measurements;

monitoring network performance including latency of transmission of the router packets to the router; and

updating values within the router packet length table in accordance with the network performance.

9. (Original) The method of claim 1, wherein generating the set of associated router packets comprises:

selecting a next segment of the function packet, wherein the next segment has a segment length that is related to the router packet data length;

generating a router packet, which includes the next segment; and

repeatedly selecting the next segment and generating the router packet until all of the function packet has been included in the set of associated router packets.

10. (Original) The method of claim 9, wherein generating the set of associated router packets comprises:

generating a router packet header, which indicates the router packet data length.

11. (Original) The method of claim 1, wherein sending the set of associated router packets comprises:

sending the set of associated router packets to a source router for delivery toward a destination router.

12-14. (Canceled)

15. (Previously Presented) A method comprising:

a source adaptor generating a set of associated router packets from a function packet received from a function packet source, wherein generating the set of associated router packets comprises:

determining the function packet length and the router packet data length, wherein the router packet length is determined from a router packet length table;

selecting a next segment of the function packet, wherein the next segment has a segment length that is less than or equal to the router packet data length;

generating a router packet, which includes the next segment; and

repeatedly selecting the next segment and generating the router packet until all of the function packet data has been included in the set of associated router packets;

wherein each router packet has a router packet data length that is less than or equal to a function packet length;

the source adaptor sending the set of associated router packets to a source router;

the source router sending the set of associated router packets toward a destination router;

the destination adaptor receiving the set of associated router packets from the destination router;

the destination adaptor generating a re-assembled function packet from the set of associated router packets; and

the destination adaptor sending the re-assembled function packet to a function packet destination.

16. (Canceled)

17. (Original) The method of claim 15, wherein generating the re-assembled function packet comprises:

removing a router packet header of each packet of the set of associated router packets.

18-20. (Canceled)

21. (Previously Presented) An apparatus comprising:

at least one router, which is operable to communicate with other routers using packet-based communications; and

multiple processing elements, wherein selected ones of the multiple processing elements include

at least one adaptor, operably connected to a router, which is operable to generate a set of associated router packets from a function packet received from a function packet source, wherein each router packet has a router packet data length that is less than or equal to a function packet length, and to send the set of associated router packets to a router, and

at least one function packet source, operably connected to the adaptor;

wherein generating the set of associated router packets comprises:

determining the function packet length and the router packet data length, wherein the router packet length is determined from a router packet length table;

selecting a next segment of the function packet, wherein the next segment has a segment length that is less than or equal to the router packet data length;

generating a router packet, which includes the next segment; and

repeatedly selecting the next segment and generating the router packet until all of the function packet data has been included in the set of associated router packets.

22. (Original) The apparatus of claim 21, wherein an adaptor comprises:

a first data buffer, which is operable to receive the function packet from the function packet source;

a router packet formation module, which is operable to generate the set of associated router packets from the function packet; and

a router interface, which is operable to send the set of associated router packets to the router.

23. (Original) The apparatus of claim 22, wherein the adaptor further comprises:

a second data buffer, which is operable to receive a different set of associated router packets and re-assemble a second function packet; and

a packet-based communications element interface, which is operable to send a re-assembled function packet to a function packet destination.

24. (Original) The apparatus of claim 21, further comprising at least one antenna, which is operable to provide an interface between an air interface and the apparatus.

25. (Previously Presented) A computer-readable medium having program instructions stored thereon to perform a method, which when executed within an electronic device, result in:

generating a set of associated router packets from a function packet received from a function packet source, wherein generating the set of associated router packets comprises determining the router packet length from pre-stored router packet length information that can be different from function to function, and wherein each router packet has a router packet data length that is less than or equal to a function packet length; and

sending the set of associated router packets to a router.

26. (Original) The computer-readable medium of claim 25, wherein execution of the method further results in:

determining the function packet length and the router packet data length from a function packet header;

selecting a next segment of the function packet, wherein the next segment has a segment length that is related to the router packet data length;

generating a router packet, which includes the next segment; and

repeatedly selecting the next segment and generating the router packet until all of the function packet has been included in the set of associated router packets.

27. (Original) The computer-readable medium of claim 26, wherein execution of the method further results in:

receiving a second set of associated router packets from the router;

re-assembling a second function packet from the second set of associated router packets; and

sending the second function packet to a function packet destination.